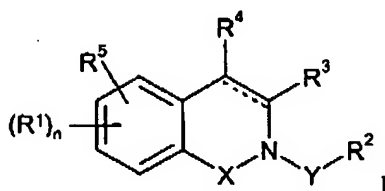


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### Claim Listing

1. (Currently Amended) A compound of the formula:



or a pharmaceutically acceptable salt,

wherein:

$n$  is from 0 to 3;

$X$  is  $-\text{CR}^a\text{R}^b-$  wherein  $\text{R}^a$  and  $\text{R}^b$  each independently are hydrogen or alkyl;

---- is an optional bond;

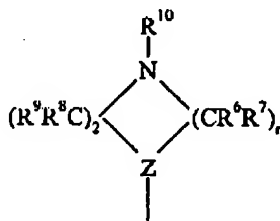
$Y$  is  $-\text{SO}_2-$ ;

each  $\text{R}^1$  independently is halo, alkyl, haloalkyl, hydroxy, nitro, alkoxy, cyano,  $-\text{S}(\text{O})_q-\text{R}^e$ ,  $-\text{NR}^c\text{R}^f$ , or  $-\text{C}(=\text{O})-\text{NR}^c\text{R}^f$ , wherein  $q$  is from 0 to 2 and  $\text{R}^e$  and  $\text{R}^f$  each independently are hydrogen or alkyl;

$\text{R}^2$  is phenyl or naphthyl optionally substituted with halo, alkoxy, haloalkyl, alkyl, ~~alkylsulfonyl~~, or  $-\text{C}(\text{O})-\text{NH}_2$  or  ~~$-\text{NH}-\text{C}(\text{O})-\text{NH}_2$~~ ;

$\text{R}^3$  and  $\text{R}^4$  each independently are hydrogen or alkyl; and

$\text{R}^5$  is at the 5- or 6- position of the isoquinoline ring system and is of the formula:



wherein:

$Z$  is  $-\text{N}-$ ;

$r$  is 2; and

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$R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$  and  $R^{10}$  each independently are hydrogen or alkyl.

2. (Original) The compound of claim 1, wherein  $R^5$  is located at the 5-position of the isoquinoline ring system.
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Previously presented) The compound of claim 1, wherein  $R^a$  and  $R^b$  are hydrogen.
7. (Canceled)
8. (Previously presented) The compound of claim 1, wherein  $R^2$  is optionally substituted phenyl.
9. (Previously presented) The compound of claim 1, wherein  $R^2$  is optionally substituted naphthalenyl.
10. (Previously presented) The compound of claim 8, wherein  $R^2$  is selected from the group consisting of phenyl, 2-halophenyl, 3-halophenyl, 4-halophenyl, 2,3-dihalophenyl, 2,4-dihalophenyl, 3,4-dihalophenyl, 2,5-dihalophenyl, 3,5-dihalophenyl, 2,6-dihalophenyl, 2-haloalkylphenyl, 3-haloalkylphenyl, 4-haloalkylphenyl, 2,3-dihaloalkylphenyl, 2,4-dihaloalkylphenyl, 3,4-dihaloalkylphenyl, 2,5-dihaloalkylphenyl, 3,5-dihaloalkylphenyl, 2,6-dihaloalkylphenyl, 2-alkoxyphenyl, 3-alkoxyphenyl, 4-alkoxyphenyl, 2,3-dialkoxyphenyl, 2,4-dialkoxyphenyl, 3,4-dialkoxyphenyl, 3,5-dialkoxyphenyl, 2,5-dialkoxyphenyl, 2,6-dialkoxyphenyl, 2-alkylphenyl, 3-alkylphenyl,

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4-alkylphenyl, 2,3-dialkylphenyl, 2,4-dialkylphenyl, 3,4-dialkylphenyl, 3,5-dialkylphenyl, 2,5-dialkylphenyl, and 2,6-dialkylphenyl.

11. (Original) The compound of claim 9, wherein  $R^2$  is naphthalene-1-yl or naphthalene-2-yl.

12. (Previously presented) The compound of claim 1, wherein  $n$  is 0.

13. (Previously presented) The compound of claim 1, wherein  $R^3$  and  $R^4$  are hydrogen.

14. (Canceled)

15. (Original) The compound of claim 14, wherein  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$  and  $R^{10}$  are hydrogen.

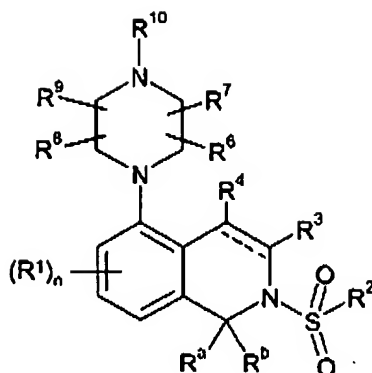
16. (Original) The compound of claim 14, wherein  $R^6$ ,  $R^7$ ,  $R^8$  and  $R^9$  are hydrogen and  $R^{10}$  is alkyl.

17-27. (Canceled)

28. (Canceled)

29. (Currently Amended) The compound of claim 1, wherein said compound is of the formula:

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and wherein n, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>a</sup> and R<sup>b</sup> are as defined in claim 1.

30. (Canceled)

31. (Previously Presented) A compound selected from the group consisting of:

- 2-benzenesulfonyl-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-benzenesulfonyl-5-(4-methylpiperazin-1-yl)-1,2,3,4-tetrahydroisoquinoline;
- 2-(4-fluoro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(4-methoxy-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(3-fluoro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(3,5-dichloro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(3,5-bis-trifluoromethyl-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(2,5-dimethoxy-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(3-chloro-4-fluoro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(2-fluoro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(2-chloro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(3-chloro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(3-methyl-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(2,3-dichloro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;

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- 2-(2-chloro-4-fluoro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;  
2-(2,5-dichloro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;  
2-(naphthalene-1-sulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;  
2-(naphthalene-2-sulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;  
2-(2-Methanesulfonyl-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;  
3-(5-Piperazin-1-yl-3,4-dihydro-1H-isoquinoline-2-sulfonyl)-benzamide; and  
[2-(5-Piperazin-1-yl-3,4-dihydro-1H-isoquinoline-2-sulfonyl)-phenyl]-urea.

32. (Original) A pharmaceutical composition comprising an effective amount of at least one compound of claim 1 in admixture with a pharmaceutically acceptable carrier.

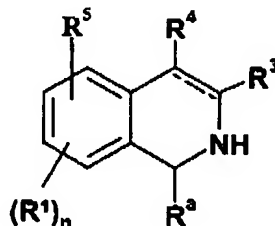
33. (Currently Amended) A method for enhancing cognitive memory in an Alzheimer's patient, said method comprising administering to said Alzheimer's patient a therapeutically effective amount of a compound of claim 1.

34. (Canceled)

35. (Canceled)

36. (Currently Amended) A method for producing a compound of claim 1, said method comprising:

reacting a compound of the formula:



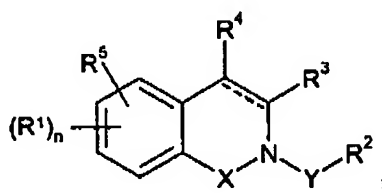
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wherein  $n$ ,  $R^1$ ,  $R^a$ ,  $R^3$ ,  $R^4$  and  $R^5$  are as recited in claim 1,

with a sulfonyl halide of the formula:  $R^2-SO_2-G$  wherein  $G$  is halo and  $R^2$  is as defined in claim 1;

to yield a compound of formula I wherein  $Y$  is  $-SO_2-$ .

37. (New) A compound of the formula:



or a pharmaceutically acceptable salt,  
 wherein:

$n$  is from 0 to 3;

$X$  is  $-CR^aR^b-$  wherein  $R^a$  and  $R^b$  each independently are hydrogen or alkyl;

--- is an optional bond;

$Y$  is  $-SO_2-$ ;

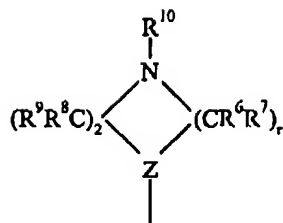
each  $R^1$  independently is halo, alkyl, haloalkyl, hydroxy, nitro, alkoxy, cyano,  $-S(O)_q-R^c$ ,  $-NR^eR^f$ , or  $-C(=O)-NR^eR^f$ , wherein  $q$  is from 0 to 2 and  $R^e$  and  $R^f$  each independently are hydrogen or alkyl;

$R^2$  is phenyl, 2-fluorophenyl, 3-fluorophenyl, 4-fluorophenyl, 2-chlorophenyl, 3-chlorophenyl, 3-methylphenyl, 4-methoxyphenyl, 2-methanesulfonylphenyl, 4-amidophenyl, 4-ureaphenyl, 3,5-dichlorophenyl, 2,3-dichlorophenyl, 2,5-dichlorophenyl, 3,5-di(trifluoromethyl)phenyl, 2,5-dimethoxyphenyl, 3-chloro-4-fluorophenyl, 2-chloro-4-fluorophenyl, naphthalen-1-yl, naphthalen-2-yl, or quinolin-8-yl

$R^3$  and  $R^4$  each independently are hydrogen or alkyl; and

$R^5$  is at the 5- or 6- position of the isoquinoline ring system and is of the formula:

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wherein:

Z is -N-;

r is 2; and

R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup> and R<sup>10</sup> each independently are hydrogen or alkyl.